



WMO/IOC/UNEP/ICSU
GLOBAL CLIMATE OBSERVING
SYSTEM (GCOS)

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**9th GRUAN Implementation-
Coordination Meeting (ICM-9)**

Session 7

Helsinki, Finland

12 - 16 June 2017

GRUAN Site Report for Cabauw/De Bilt

(Submitted by Arnoud Apituley)

Summary and Purpose of this Document

Report from the GRUAN site Cabauw/De Bilt for the period March 2016 to April 2017.

Overview

The routine RS92 launches (00 UTC) are contributing to the GRUAN data stream, as well as the data from RS92 launches attached to the weekly (noon) ECC ozone sondes.

GNSS data can be submitted when possible.

The RSLaunchClient is still not used unfortunately. It was requested that ground station PC is upgraded to allow normal network traffic needed for the RSLaunchClient. This process is now (again) frustrated by internal procedures. This is high on our priority list, for GRUAN, as well as other reasons.

Change and change management

On 17 January 2017, KNMI has transitioned from RS92 to RS41 for all sonde launches, including the ozone sondes. A final, dual launch test, or near simultaneous launch test, will be conducted in the second half of 2017.

A transition team has prepared a transition plan that was executed. The plan included the complete overhaul and testing of the ground station, the conditioning unit, handling of the unwinder, streamlining of the operational data flow, etc.

The station information is correct.

Resourcing

Resources are limited to routine radiosonde launches once per 24 hours, ozone sonde launches once per week, and occasional radiosonde launches at request from operational forecast perspectives.

Work on GNSS and ancillary observations (i.e. microwave radiometer, lidar) are ongoing in relation to other projects (and external funding sources).

Operations

Issues with the burstpoint altitude were resolved earlier. The implementation of the RSLaunchClient and Standard Humidity Chamber can be done now. The implementation needs to be scheduled in the radiosonde operations team and is pending availability of the GRUAN Site Manager for defining the tasks.

Site assessment and certification

Cabauw/De Bilt is certified.

A visit was conducted to the Paramaribo station, where KNMI is responsible for the NDACC and SHADOZ ozone sonde launches, as well as Brewer total ozone, radiation and surface ozone measurements. Aim of the visit was to assess the possibilities for continuation of observations and possible association with additional networks such as GRUAN and BSRN.

GRUAN-related research

KNMI is involved in GaiaClim and ACTRIS, under the umbrella of which some GRUAN-related work is done. KNMI is member of the Task Team Ancillary Measurements, particularly collaborating in the development of potential GRUAN lidar data products.

WG-GRUAN interface

None needed.

Items for ICM-9 plenary discussions

NIL

Future plans

- Use of RSLaunchClient
- Use of SHC for all radiosonde and ozone sonde launches



GRUAN Station Report for Cabauw (CAB), 2016/17

Reported time range is Mar 2016 to Apr 2017

Created by the Lead Centre

Version from 2017-06-06

1 General GRUAN station information

Info	Value
Station name	Cabauw
Unique GRUAN ID	CAB
Geographical position	51.9700 °N, 4.9200 °E, 1.0 m
Operated by	KNMI Koninklijk Nederlands Meteorologisch Instituut
Main contact	Apituley, Arnoud
WMO no./name	06260 DE BILT AWS
Operators	current 0, change +0 / -0
Sounding Site	1
GNSS	1

1.1 General information about GRUAN measurement systems

System	Type	Setups	Measurements	As scheduled
CAB-GN-01	GNSS	0	not operational	not scheduled
CAB-RS-01	Sounding Site	4	362	59.83 %

1.2 General comments from Lead Centre

1.2.1 General

It is strongly recommended that the site uses the RsLaunchClient to submit data to the Lead Centre.

The site uses a Standard Humidity Chamber during launch preparation of the ECC ozone soundings, but these data are not submitted to the Lead Centre. Using the RsLaunchClient will allow proper submission of these data. It is recommended to use the SHC during the preparation of the operational soundings as well.

The site is requested to submit ECC ozone soundings with complete metadata matching an ECC ozone sonde and not to submit it as routine radiosounding.

2 System: GNSS Site CABW (CAB-GN-01)

Info	Value
System name	GNSS Site CABW
Unique GRUAN ID	CAB-GN-01
System type	GNSS (GN - GNSS)
Geographical position	51.9690 °N, 4.9260 °E, 2.4 m
Operated by	KNMI Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
Started at	-
Defined setups	-
Possible streams	-

2.1 Lead Centre comments

2.1.1 Dataflow

No GNSS dataflow to GRUAN LC as yet.

3 System: Radiosonde Launch Site (De Bilt) (CAB-RS-01)

Info	Value
System name	Radiosonde Launch Site (De Bilt)
Unique GRUAN ID	CAB-RS-01
System type	Sounding Site (RS - Radiosonde)
Geographical position	52.1000 °N, 5.1800 °E, 1.0 m
Operated by	KNMI Koninklijk Nederlands Meteorologisch Instituut
Instrument contact	Apituley, Arnoud
Started at	-
Defined setups	4 (ROUTINE, OZONE, ROUTINE2, OZONE2)
Possible streams	RS41, RS92

3.1 Lead Centre comments

3.1.1 Dataflow

Sonde dataflow from De Bilt to the GRUAN LC was operational in a fully automated mode from January 2011 until 15 January 2017. The launch metadata were not checked by operators. Equipment changes (e.g. balloon, unwinder, ...) were not recorded.

As a consequence it was essential that the Lead Centre was notified of all upcoming changes to be able to maintain a correct metadata record.

Since 15 January 2017, data flow is temporary stopped because change of operational sonde from Vaisala RS92 to RS41.

3.1.2 General

Change of operational sonde from Vaisala RS92-SGP to Vaisala RS41-SG was on 15 January 2017.

3.2 GRUAN data products

Product	Version	Soundings received	Available at LC	Distributed by NCDC
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3.2.1 Stream: RS92

RS92		362	362	
RS92-RAW	001		360	
RS92-RAW	002		360	
RS92-EDT	001		356	356
RS92-GDP	002		325	215

3.3 Data availability of data products

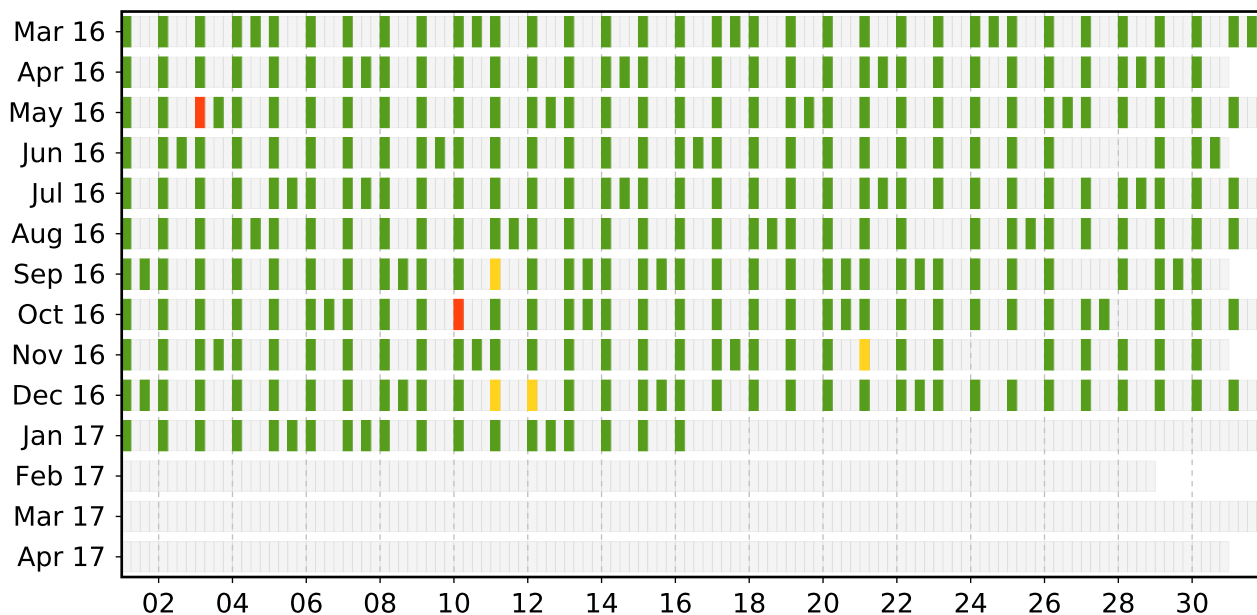
Available (green): All steps of processing have been successfully completed. The data file is available at NCEI (NCDC).

Unprocessed (yellow): The raw data file has been successfully converted to a GRUAN standardized raw data file format (NetCDF). The processing itself (e.g. extracting manufacturer data product or GRUAN data processing) is not done yet, or could not be completed. Reason may be missing raw data, or software bugs.

Failed (red): Raw data file could not be converted to a GRUAN standardized raw data file format (NetCDF). Reason may be a corrupt original raw data file, or software bugs.

3.3.1 Stream: RS92 (Product: RS92-EDT-001)

Schedule data availability of stream RS92



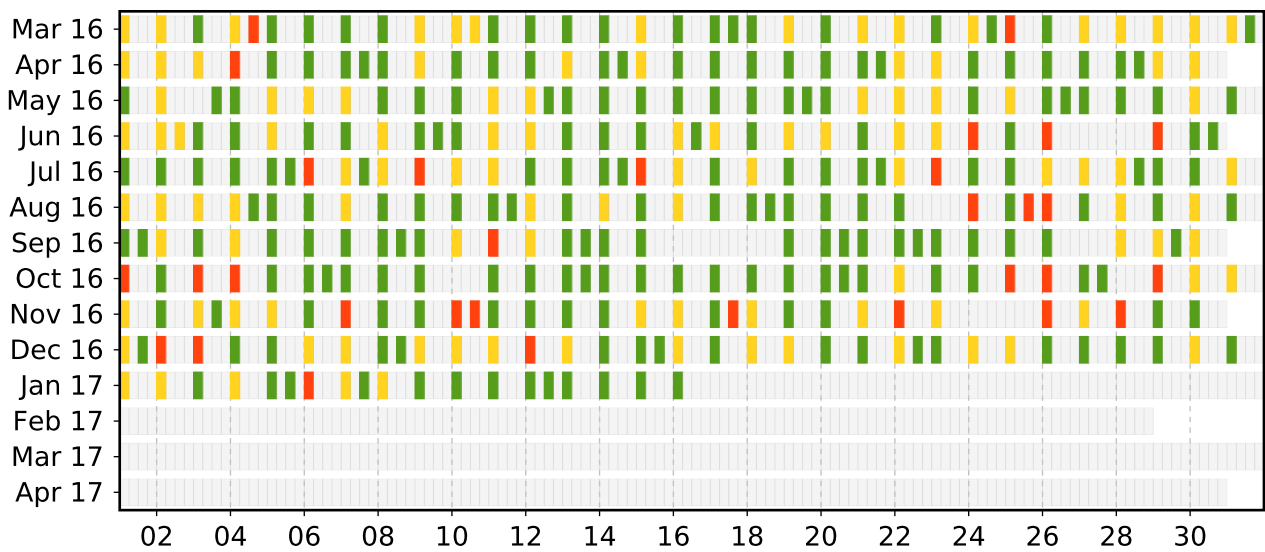
3.4 Data quality of current GRUAN data products

Month	Count	GRUAN Data Quality			Issues				
		Approved	Checked	Rejected	Meta-data	Process.	Press	Temp	RH

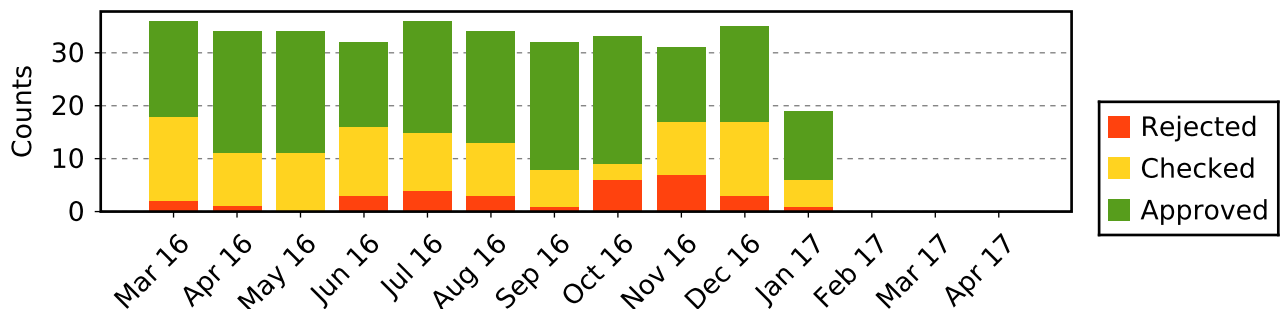
3.4.1 Stream: RS92 (Product: RS92-GDP-002)

Mar 16	36	18	16	2			1	1	17
Apr 16	34	23	10	1			1		10
May 16	34	23	11				2		11
Jun 16	32	16	13	3			4		14
Jul 16	36	21	11	4					13
Aug 16	34	21	10	3			4	1	13
Sep 16	32	24	7	1			3	1	8
Oct 16	33	24	3	6			3		5
Nov 16	31	14	10	7			2	1	11
Dec 16	35	18	14	3			2		17
Jan 17	19	13	5	1			1		6
Feb 17									
Mar 17									
Apr 17									
	356	215	110	31			23	4	125

Schedule data quality of stream RS92



Data quality statistic of stream RS92



3.5 Instrument combinations of CAB-RS-01

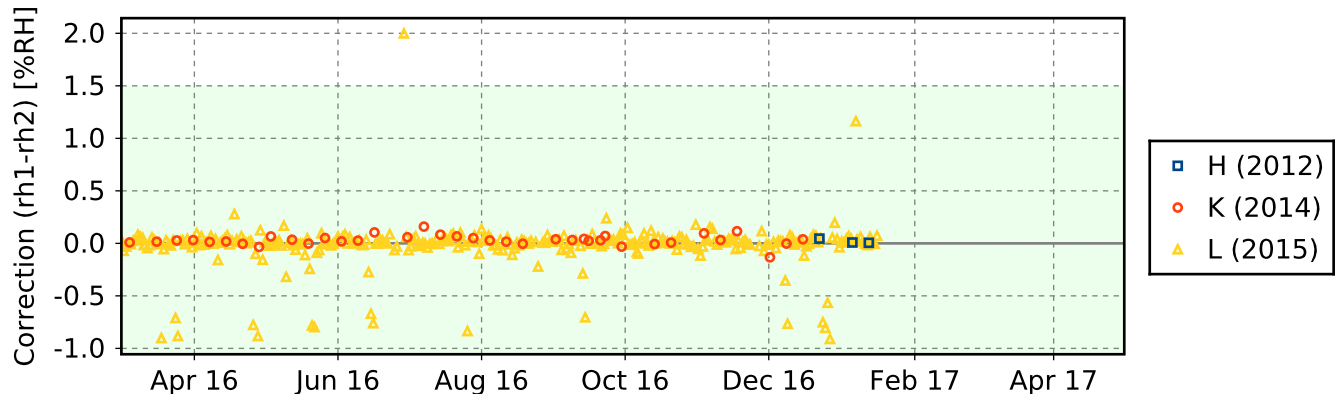
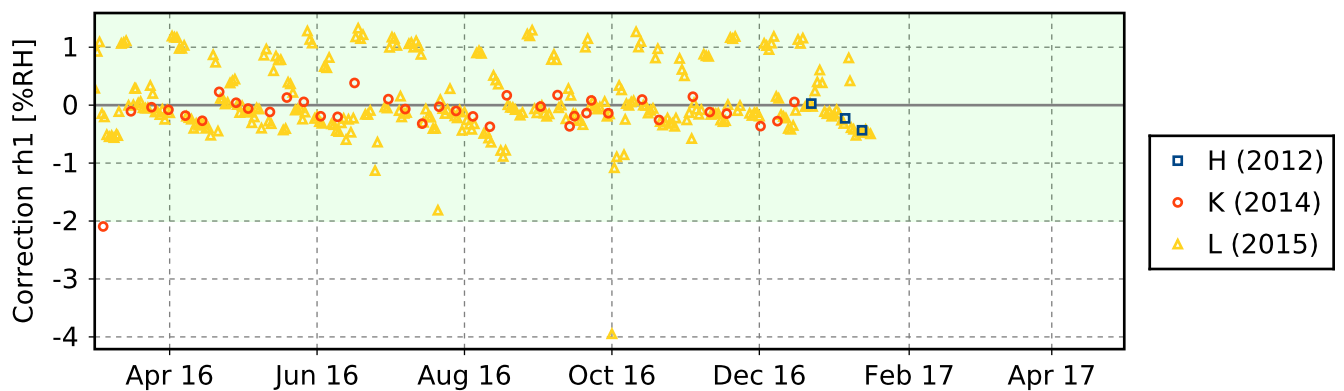
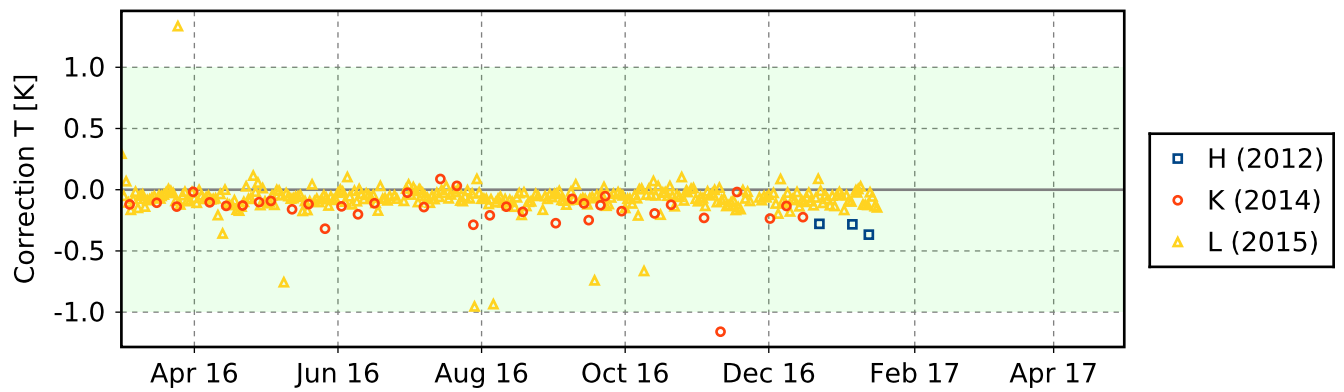
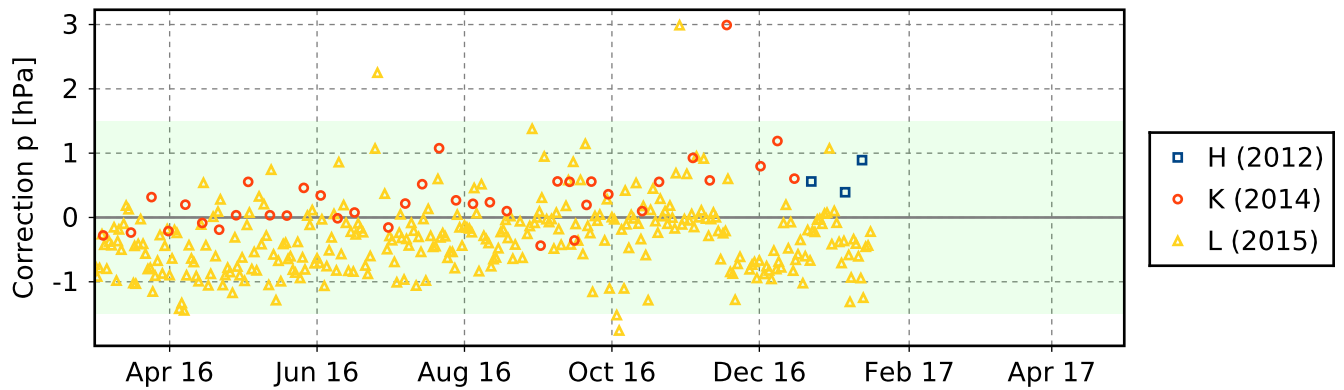
Count	Instrument combination
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362	RS92
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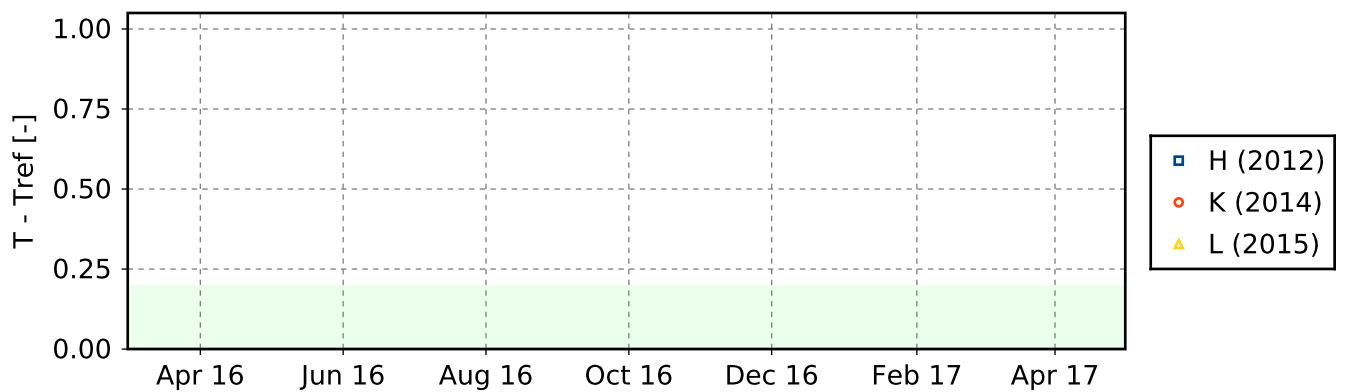
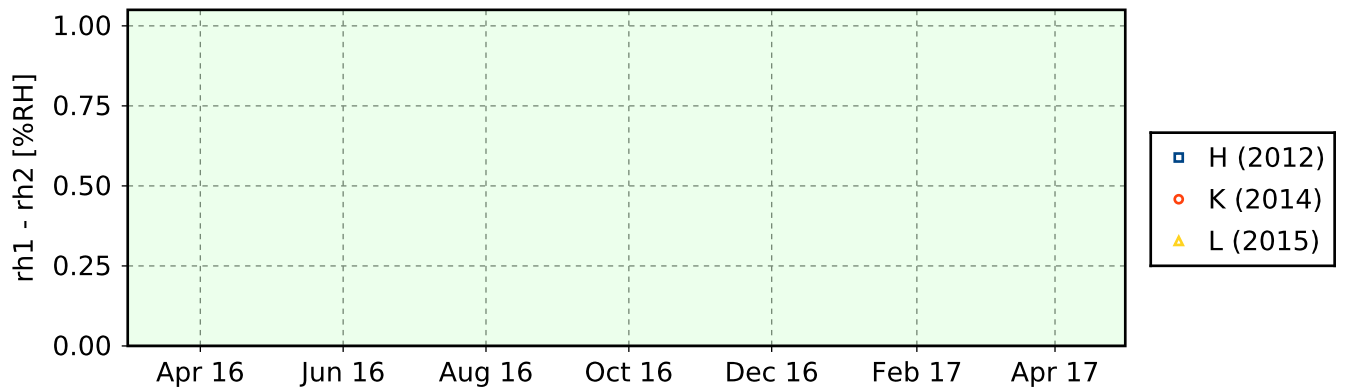
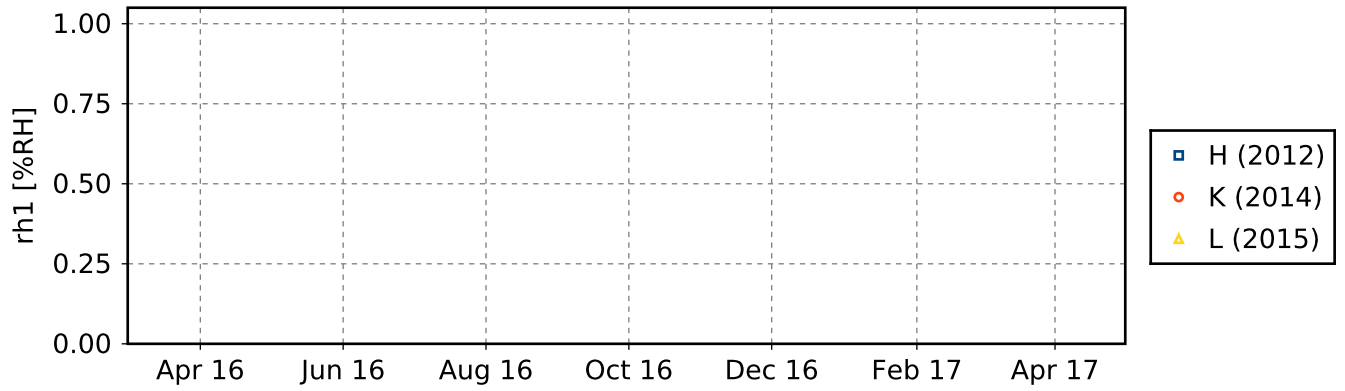
3.6 Instrument ground check

3.6.1 Stream: RS92

3.6.1.1 GroundCheck: GC25



3.6.1.2 GroundCheck: SHC



3.7 Measurement events

3.7.1 Stream: RS92

